



The paleoclimatic development of the Trondheimsfjorden during the late Holocene

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Fjords are ideal sites for studying paleoclimatic fluctuations on decadal to centennial time scales because high sedimentation rates of several mm per year provide advanced insight into the mode of Holocene climate variability. This is particularly relevant for assessing future climate development as the Holocene is characterized by natural, recurrent climatic instabilities, which evidently operated independently of the size of high-latitude ice sheets. In this project, the partners studied a 15 m long sediment core (S4) drilled in the inner Trondheimsfjorden to investigate the Holocene climate variability in central Norway. Proxy records for deciphering abrupt changes in sea surface temperatures (SST), surface water productivity, and terrestrial organic matter supply into the Trondheimsfjorden are produced. The investigations show how and why sea surface properties and continental climate have changed in the area of the Trondheimsfjorden during the last 5000 years B.P. and how they are related to climate variability in the North Atlantic region, emphasizing particularly on abrupt, millennial to decadal-scale cooling events, which punctuated the Holocene warm period.